

Global Pharmaceuticals

INDUSTRY OVERVIEW/ANALYSIS



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Predicting US Rebate Pressure to 2019

We present our proprietary analysis of gross and net US drug prices for 25 companies in our coverage with reported US drug revenues of \$228bn. We analyse the recent trends in rebating, and project forward expected rebates based on portfolio mix changes to 2019. We rank the companies on their power to defend against managed care pressure based on exposure to the US, current portfolio uniqueness and how we expect this to change to 2019. We also look at Medicare/Medicaid exposure where additional access controls have notably slowed the adoption of new products.

- **The US market continues to see high list price rises** averaging >10% in 2015 and 1Q 2016 despite the political scrutiny ahead of an election year. A significant proportion of the gross price rises is rebated away. We estimate nearly \$130bn of rebates in 2015, which we consider as promotional spend alongside traditional SG&A.
- **US net drug pricing remains a key driver of overall industry profit growth**, adding an estimated 8% to overall net income in 2015 and accounting for >100% of the reported net income growth of only +2% last year.
- **Rebates have been rising faster than sales.** We have seen a 10pp rise in rebates over the past 5 years for companies with average uniqueness. We project an extra 5-10pp rise by 2019. We believe that portfolio uniqueness is the best form of defence.
- We conclude that **GSK, Novartis, Teva** (Specialty) and **UCB**, as well as Biotech's **Biomarin, Vertex** and **Celgene**, should see the most benign exposure to rebate pressures to 2019. **Novo Nordisk** and **Amgen** have the most negative exposure.
- **We look to the initial 2017 formulary listings from July**, progress towards implementation of proposed Part B changes and continued healthcare commentary from US presidential candidates.

Figure 1: Credit Suisse US Rebate Analysis, 2016

Parameter	US Exposure	Uniqueness 2015	Change in Uniqueness to 2019	Exposure of growth drivers to Medicare D	Overall
Weighting	20%	20%	40%	20%	
GSK	+	-	+++	+	+++
Novartis	+	+	+++	---	+++
Bayer	+++	-	0	+	+
AZN	-	-	+++	-	+
Pfizer	0	+	+	-	+
Sanofi	+	-	+	0	+
Roche	0	+++	---	+++	0
BMJ	---	+	-	+++	0
AbbVie	---	-	+	0	-
JNJ	+	-	-	0	-
LLY	-	0	-	+	-
MRK	0	0	---	+++	-
Novo Nordisk	---	---	-	---	---
Teva	-	-	+++	+++	+++
UCB	0	0	+++	+	+++
Shire	---	0	+	+++	+
Lundbeck	+	+	-	-	0
Merck KGaA	+++	0	---	0	-
Biomarin	+++	+++	+++	+++	+++
Vertex	+	+++	+++	+++	+++
Celgene	0	+++	+++	---	+++
BIIB	0	+	---	+	-
Gilead	-	-	-	-	-
Regeneron	---	---	0	+	-
Amgen	-	0	---	-	---

Scores are made relative to peers. + = positive; - = negative; 0 = neutral
Source: Credit Suisse research

RESEARCH ANALYSTS

European Pharma Team
44 207 888 0304
creditsuisse.pharmateam@credit-suisse.com

Vamil Divan, MD
212 538 5394
vamil.divan@credit-suisse.com

Alethia Young
212 538 0640
alethia.young@credit-suisse.com,

Jo Walton
44 207 888 0304
jo.walton@credit-suisse.com

Matthew Weston, PhD
44 207 888 3690
matthew.weston@credit-suisse.com

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Key takeaways

- **List price rises are stabilising:** There appear to be early signs of growth in list price rises stabilising, having slowed from 11.6% in 2014 to 10.8% in 2015 across our universe of companies.

Companies with the highest list price rises in 2015 were Lundbeck (+31%), AbbVie (+20%), and Novo Nordisk (+19%). Companies with the lowest list price rises were Vertex (no price rise in 2015), US Biotech's Biomarin and Gilead (both +0.5%), Celgene (+4%), Roche (+5%) and GSK (+7%).

- **Rebates increasing yoy:** Rebates have increased to from 35% in 2014 to 37% in 2015 for our universe. Rebate growth of +28% has outpaced net sales growth of 5% between 2009 and 2015. EU Pharma continues to have higher discounting than US Pharma on average, with rebates of 43% and 36% respectively.

AZN, Novo, GSK and Sanofi had the highest levels of rebating in 2015, all >49%, and Vertex, Biomarin and Regeneron reported the lowest levels of rebates of 10% or less.

- **Rebates continue to offset reported SG&A:** Reported SG&A has been declining in general across our universe but we see that effectively this has been offset by growth in rebates, which we consider part of the marketing burden for products. AZN, Novo, GSK and Sanofi had the highest aggregate promotional costs as a % of gross US sales.

- **High level of uniqueness is best defence against rebate pressure:** We still see a high level of uniqueness providing the best defence against rising rebate pressure. Over time we see that for a low level of portfolio uniqueness c30% reported rebates have increased from c30% in 2009 to c40% in 2015. In 2015 Celgene, Roche and Vertex had over 85% of current worldwide (ww) sales rated as unique. Companies with the least unique portfolios include Regeneron, AZN, Bayer, Novo and GSK all with under 15% of sales rated as unique.

Companies increasing their contribution of unique drugs by greater than 10% from 2015 to 2019 include AbbVie, AZN, GSK and Novartis. We expect Roche, BIIB and BMJ to see the biggest theoretical loss in uniqueness by 2019.

- **Rebate pressure from government funded Medicaid & Medicare Part D is rising:** We believe that companies are having to increase rebates to sustain exposure to Medicare/Medicaid, as accessing patients becomes increasingly difficult through mechanisms such as formulary blocks. For a given level of exposure to Medicare/Medicaid of 30%, reported rebates have increased from c40% in '14 to c50% in '15. Novo and Sanofi are the most exposed, reflecting their diabetes sales. We note Oncology sales are typically funded through Medicare Part B, where there are currently very few access controls and low rebates, although we detail changes that may be coming.

- **Predicting future rebates with uniqueness:** Based on our uniqueness categorization of portfolios we look to derive future rebate pressures. Our database suggests that Roche and Amgen may be in a position where they feel further pressures from payors to drive higher rebates whereas we believe rebate pressures on GSK and AZN in particular may ease somewhat while for Roche and Amgen they may increase. Our analysis suggests that rebate levels for the universe could rise from 37% in 2015 to 47% by 2019 if current rates of rebate increases continue.

- **Age profile improving, but average period of uniqueness declining:** In the past 5 years we have seen the proportion of drugs over 10 years on the market rise from 58% to >67% but we expect this to begin to reverse with growth driven by younger products, which may help mitigate rebate pressures. However, looking at the lead time between first entrants and second in class launches, we see this period decreasing, thus potentially building competitive pressures earlier in a products lifecycle

Figure 2: Summary data on US drug sales. US drug price rises, rebates and uniqueness

Company	2015		List Price rises		Rebates		% chg in '15 net inc		% sales unique		% US exp Medicare/Medicaid 2015
	US Rx sales \$m	US sales % group	2014	2015	2014	2015	US Price	Overall	2015	Chg to '19	
AbbVie	13521	59%	14.7%	20.0%	35%	40%	19%	31%	16%	8%	13%
Amgen	16605	77%	8.7%	13.5%	29%	31%	23%	35%	56%	-13%	16%
BIIB	6548	61%	9.2%	10.5%	23%	25%	9%	21%	71%	-17%	7%
BMJ	8188	49%	10.6%	7.8%	35%	35%	13%	9%	50%	-17%	30%
Biomarin	444	50%	1.2%	0.5%	10%	12%	2%	28%	99%	-6%	15%
Celgene	5519	60%	7.4%	3.9%	15%	16%	5%	-20%	93%	0%	66%
Eli Lilly	8542	43%	14.4%	16.7%	32%	39%	17%	22%	34%	-1%	23%
Gilead	21234	65%	2.3%	0.5%	23%	36%	-13%	50%	37%	3%	28%
JNJ	18333	26%	9.3%	8.5%	32%	37%	2%	2%	22%	7%	23%
Merck	16238	41%	12.1%	13.3%	32%	34%	9%	0%	30%	-9%	33%
Pfizer	18727	38%	16.7%	13.2%	31%	34%	8%	-5%	41%	-4%	29%
Regeneron	2690	66%	0.0%	15.3%	6%	7%	31%	88%	6%	3%	0%
Teva	6442	33%	12.9%	15.3%	50%	56%	8%	8%	8%	15%	9%
Vertex	709	69%	0.0%	0.0%	13%	10%	-1%	-24%	94%	6%	15%
AstraZeneca	9541	39%	9.8%	11.3%	57%	60%	13%	-29%	12%	18%	38%
Bayer	3767	7%	8.7%	14.4%			0%	0%	12%	3%	15%
GSK	10392	28%	7.4%	6.8%	39%	50%	-5%	-17%	15%	11%	31%
Lundbeck	954	44%	17.1%	31.0%	11%	22%	60%	-59%	21%	3%	23%
Merck KGaA	1880	13%	16.0%	11.3%	14%	18%	3%	-14%	26%	-1%	10%
Novartis	11816	23%	12.1%	14.9%	27%	25%	12%	-2%	46%	11%	23%
Novo Nordisk	8448	53%	22.8%	19.0%	47%	55%	12%	0%	14%	3%	38%
Roche	18302	37%	4.7%	4.8%			0%	0%	85%	-32%	12%
Sanofi	12402	30%	30.7%	11.4%	43%	49%	5%	-6%	18%	6%	34%
Shire	4432	69%	9.7%	8.2%	32%	33%	10%	11%	39%	3%	15%
UCB	1897	44%	17.7%	9.4%	24%	25%	23%	17%	25%	4%	26%
Universe	228671	37%	11.6%	10.8%	35%	37%	6%	6%	36%	0%	25%
US domicile	143740	45%	10.4%	10.9%	30%	34%	5%	14%	35%	-1%	24%
EU domicile	84931	28%	13.4%	10.8%	42%	44%	8%	-8%	33%	1%	26%

Source: Company data, Credit Suisse estimates

What's in this report

We provide our annual review of the levels of US list price rises and reported rebates for 25 companies. This universe reported c\$228bn of 2015 US branded drug sales after \$130bn of rebates provided to government and commercial insurers. These rebates remain an integral part of the US healthcare system with Pharmacy Benefit Managers able to extract rebates from manufacturers in exchange for favourable formulary access. We conclude that the contribution from net US price rises to net income for this universe of manufacturers remains crucial and that if this is tempered, then other discretionary spending will have to be lowered to sustain profit growth.

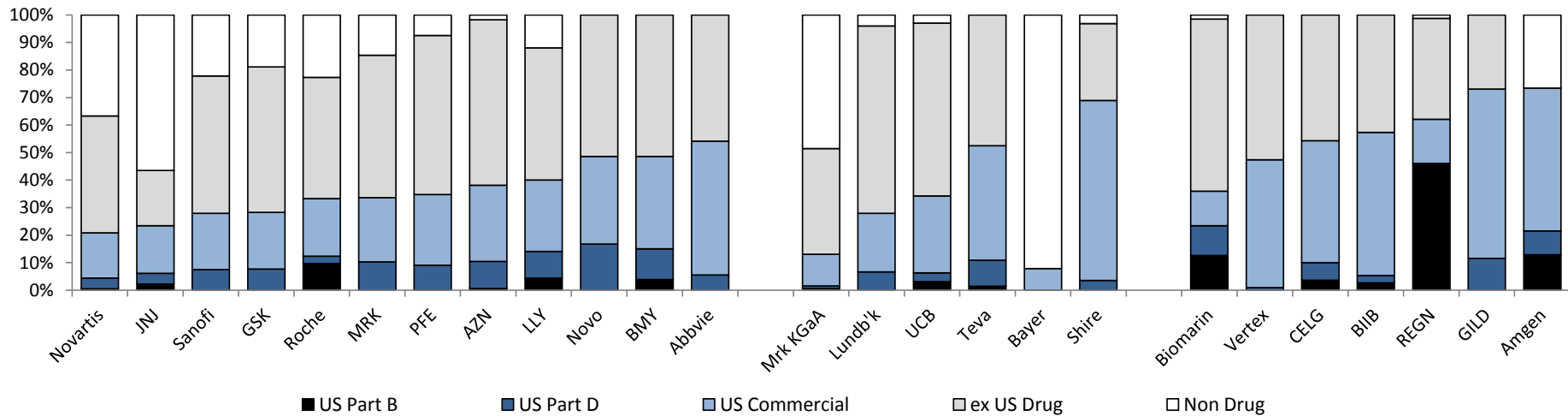
This year we go beyond our usual analysis of the correlation of current rebates to levels of portfolio uniqueness and Medicare/Medicaid exposure, to show how rebate levels for a given level of uniqueness and a given level of Medicare exposure have changed over time, reflecting what we believe is a further shift in the balance of power in favour of the payors. We have also used our PharmaValues database to predict future rebate levels based on how we see the portfolios of our universe of companies evolving. This analysis suggests that rebate levels could rise from 37% in 2015 to 47% by 2019 if current trends continue unabated.

We have also looked at the relationship between portfolio age and rebates. As pricing for Medicaid patients is capped at CPI, government rebates naturally build over time. With key older drugs such as Lantus and Advair going off patent and set to decline, our database suggests that a shift towards sales of younger products may provide some offset to the expected continued rebate pressure from expanding Medicare/Medicaid programs.

Most of the rebate pressures that we have seen have come from out-patient drugs, typically funded either by commercial healthcare insurance, or for the elderly via Medicare Part D. This year we have also looked at drugs reimbursed under a patient's medical benefits that typically cover hospital expenses and for the elderly fall under a separate Part B program. Reimbursement here is on a cost plus basis, favouring expensive treatments and although plans have the ability to charge patients differential co-pays to steer patients towards preferred drugs, we understand that this ability is currently rarely used (13% of plans). Recent proposed changes to reimbursement in Medicare Part B suggest authorities are waking up to opportunities to change incentives and control costs.

In Figure 3 we breakdown 2014 group sales for our universe, putting exposure to various parts of the US healthcare system into context at a group level.

Figure 3: 2014 US drug sales by payor (note US government Part B and Part D spending data only available up to 2014)



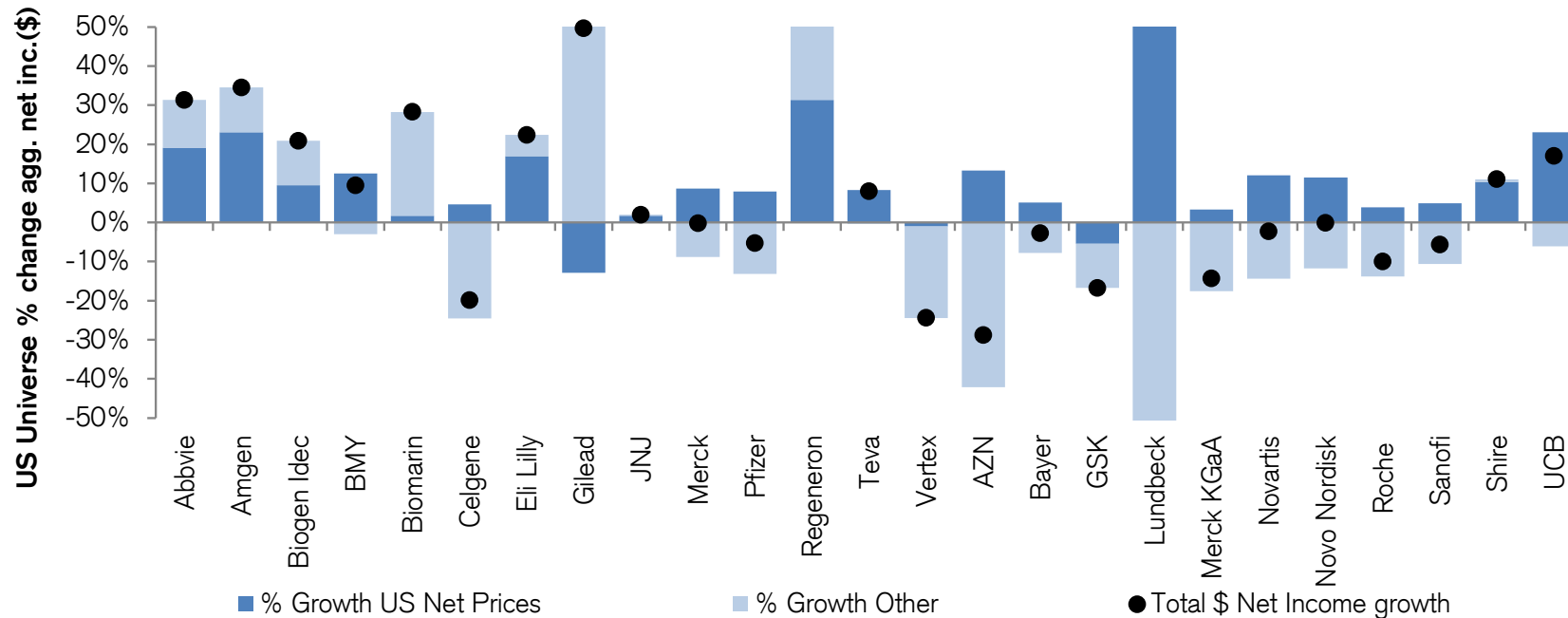
Source: Company data, Credit Suisse estimates, CMS

Estimated impact of US price rises on 2015 net income

We estimate the effect of net US prices has contributed positively to net income by 8% on average between 2011 and 2015. The contribution of net US pricing was particularly strong in 2012 and 2013 when the industry was suffering significantly from patent expiries. However, US pricing remained an important driver of net income growth in 2014 and 2015. This is crucially important when considering the sustainability of future net income growth given the focus on pricing in the US.

In Figure 5 we look at the impact in 2015 by company. For a number of companies currently with low or zero current reported profits (e.g. Lundbeck, Regeneron) the apparent impact of US net price rises looks disproportionately strong. Major companies where net US drug price rises have been the most significant drivers of overall net income in recent years are AbbVie, Amgen, Lilly, and Shire. Major companies who we calculate have been the least reliant on US net price rises have been Vertex, Biomarin, GlaxoSmithKline, Merck KGaA and Gilead.

Figure 4: Estimate of US net price rises impact on 2015 net income



Source: Company data, Credit Suisse estimates, Wolter Kluwer, IMS

Figure 5: Valuation Table

Company	EV \$m	CCY	Price				P/E			2016 Divi yield	EV/ NPV	NPV/ Share	Equity PV/Share	+/-
			Price	Target	+/-	Rating	2017	2018	2019					
Major Pharma														
AbbVie Inc.	130,939	USD	62.5	67.0	7%	OUTPERFORM	11.1	9.3	8.4	3.4%	1.18	67.5	50.1	-20%
AstraZeneca	103,238	GBP	38.8	40.0	3%	UNDERPERFORM	21.4	14.2	10.0	5.0%	1.12	47.2	30.7	-21%
Bayer	122,595	EUR	95.2	117.0	23%	NEUTRAL	13.3	11.9	11.3	2.6%	0.94	142.6	106.3	12%
Bristol Myers Squibb	116,924	USD	71.3	79.0	11%	OUTPERFORM	22.4	19.7	16.5	2.1%	1.19	58.6	60.3	-15%
Eli Lilly & Co.	86,475	USD	76.0	91.0	20%	OUTPERFORM	19.8	17.1	14.3	2.7%	0.91	89.6	83.9	10%
GlaxoSmithKline plc	144,241	GBP	14.4	14.4	0%	NEUTRAL	17.8	17.0	16.1	5.6%	1.15	16.7	11.0	-23%
Johnson & Johnson	292,687	USD	114.2	112.0	-2%	NEUTRAL	16.5	16.0	15.5	2.8%	1.11	95.3	104.1	-9%
Merck & Co., Inc.	161,603	USD	54.1	57.0	5%	NEUTRAL	14.8	14.2	13.2	3.3%	1.13	51.7	47.4	-12%
Novartis	204,647	CHF	72.6	100.0	38%	OUTPERFORM	14.0	12.1	10.8	3.9%	0.89	100.4	89.0	23%
Novo Nordisk A/S	135,932	DKK	354.7	420.0	18%	NEUTRAL	21.3	19.6	17.8	2.2%	1.26	287.3	291.4	-18%
Pfizer	211,713	USD	33.2	39.0	18%	OUTPERFORM	12.7	11.7	11.3	3.6%	1.01	33.9	32.8	-1%
Roche	237,551	CHF	242.8	300.0	24%	OUTPERFORM	15.4	14.5	13.6	3.4%	0.97	296.1	269.1	11%
Sanofi	120,013	EUR	69.1	100.0	45%	OUTPERFORM	11.6	10.9	10.1	4.3%	0.73	112.9	100.7	46%
Major Pharma Average							16.3	14.5	13.0	3.4%	1.03			
Specialty														
Lundbeck	7,556	DKK	239.2	260.0	9%	OUTPERFORM	25.5	20.1	15.2	0.3%	0.95	271.7	259.7	9%
Merck KGaA	56,568	EUR	80.4	104.0	29%	OUTPERFORM	13.4	11.9	10.9	1.4%	0.92	127.5	92.5	15%
Teva	85,303	USD	50.3	60.0	19%	NEUTRAL	8.4	8.1	7.7	2.7%	1.06	78.1	45.6	-9%
Shire Pharmaceuticals	39,884	GBP	40.7	50.0	23%	OUTPERFORM	8.5	7.1	6.3	0.5%	1.20	36.0	30.8	-24%
UCB	16,083	EUR	65.8	76.0	16%	NEUTRAL	19.4	15.6	13.2	1.8%	0.80	93.3	86.0	31%
Specialty Pharma Average							15.0	12.5	10.7	1.3%	1.01			
Biotech														
Amgen, Inc.	142,470	USD	152.9	206.0	35%	OUTPERFORM	13.0	12.1	11.2	2.6%	1.24	152.3	116.9	-24%
Biogen, Inc.	61,465	USD	262.7	322.0	23%	NEUTRAL	14.2	14.0	13.6	0.0%	1.02	276.6	258.1	-2%
Biomarin	13,398	USD	79.8	114.0	43%	OUTPERFORM	893.6	41.3	16.6	0.0%	0.89	91.6	89.6	12%
Celgene Corporation	89,761	USD	100.3	140.0	40%	OUTPERFORM	14.2	11.6	9.6	0.0%	0.97	113.7	103.4	3%
Gilead	122,931	USD	82.8	120.0	45%	OUTPERFORM	6.4	7.2	7.5	2.2%	0.98	90.5	84.7	2%
Regeneron	41,181	USD	365.6	481.0	32%	NEUTRAL	24.5	22.4	19.2	0.0%	1.03	349.0	354.2	-3%
Vertex	19,901	USD	82.1	112.0	36%	OUTPERFORM	29.0	18.8	14.9	0.0%	1.02	78.7	80.4	-2%
Biotech Pharma Average							193.5	19.2	13.6	0.4%	1.05			

Source: Company data, Credit Suisse estimates, Priced at 12th May 2016

Companies Mentioned *(Price as of 13-May-2016)*

AbbVie Inc. (ABBV.N, \$62.0)
Actelion (ATLN.S, SFr155.9)
Allergan (AGN.N, \$223.35)
Amgen, Inc. (AMGN.OQ, \$152.35)
AstraZeneca (AZN.L, 3940.0p)
Baxalta Incorporated (BXLN.N, \$42.39)
Baxter International Inc. (BAX.N, \$45.52)
Bayer (BAYGn.DE, €96.14)
Biogen, Inc. (BIIB.OQ, \$262.03)
Biomarin Pharmaceuticals, Incorporated (BMRN.OQ, \$82.71)
Boehringer Ingelheim (Unlisted)
Bristol Myers Squibb Co. (BMY.N, \$71.18)
CSL Ltd (CSL.AX, A\$110.85)
Celgene Corporation (CELG.OQ, \$100.16)
Dendreon Corp. (DNDN.OQ, \$0.13)
Eli Lilly & Co. (LLY.N, \$76.33)
Gilead Sciences, Incorporated (GILD.OQ, \$82.7)
GlaxoSmithKline plc (GSK.L, 1453.0p)
Johnson & Johnson (JNJ.N, \$113.56)
Lundbeck (LUN.CO, Dkr240.2)
Merck & Co., Inc. (MRK.N, \$53.88)
Merck KGaA (MRGG.DE, €82.25)
Novartis (NOVN.S, SFr73.3)
Novo Nordisk A/S (NOVOB.CO, Dkr357.0)
Otsuka Holdings (4578.T, ¥4,335)
Perrigo Company plc (PRGO.N, \$88.36)
Pfizer (PFE.N, \$33.19)
Regeneron Pharmaceuticals, Inc. (REGN.OQ, \$369.46)
Roche (ROG.S, SFr245.1)
Sanofi (SASY.PA, €69.98)
Shire Pharmaceuticals (SHP.L, 4134.0p)
Takeda Pharmaceutical (4502.T, ¥4,872)
Teva Pharmaceutical Industries Ltd. (TEVA.N, \$50.3)
UCB (UCB.BR, €66.72)
United Therapeutics Corp. (UTHR.OQ, \$111.48)
Vertex Pharmaceuticals Incorporated (VRTX.OQ, \$81.38)

Disclosure Appendix

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relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. For Latin American and non-Japan Asia stocks, ratings are based on a stock's total return relative to the average total return of the relevant country or regional benchmark; prior to 2nd October 2012 U.S. and Canadian ratings were based on (1) a stock's absolute total return potential to its current share price and (2) the relative attractiveness of a stock's total return potential within an analyst's coverage universe. For Australian and New Zealand stocks, the expected total return (ETR) calculation includes 12-month rolling dividend yield. An Outperform rating is assigned where an ETR is greater than or equal to 7.5%; Underperform where an ETR less than or equal to 5%. A Neutral may be assigned where the ETR is between -5% and 15%. The overlapping rating range allows analysts to assign a rating that puts ETR in the context of associated risks. Prior to 18 May 2015, ETR ranges for Outperform and Underperform ratings did not overlap with Neutral thresholds between 15% and 7.5%, which was in operation from 7 July 2011.

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